CLAIMS

1. A glass comprising:

Oxide	Mole %
SiO_2	35 – 75
GeO_2	0-10
B_2O_3	0 – 8
Al_2O_3	0 – 8
Li_2O	>0 – 25
Na_2O	0 – 60
K_2O	0 – 6
MgO	0 – 35
Σ BaO, SrO, CaO, ZnO, PbO	0 – 10
TiO_2	0 – 5
La_2O_3	0 – 30
RE_2O_3	0 – 12
Y_2O_3	>0 – 30
As_2O_3	0 – 0.5
F	0 – 5
Sum R_2O_3, R=Al, B, La and RE	0 – 40

wherein RE represents rare earth ions, excluding La.

2. A glass according to claim 1, having the following properties:

Property	Range
n_d	> 1.5
T(%) at 1550 nm for 1.0 mm	> 88
CTE (-30 to +70°C) x $10^{-7}/^0C$	$\geq$ 90, especially $\geq$ 110
E (GPa)	> 80
Tg (°C)	$\geq$ 350

3. A glass according to claim 1,

Oxide	Mole %
SiO_2	40 – 70
GeO_2	0-5
B_2O_3	0 – 5
Al_2O_3	0 – 5
Li_2O	>0 – 25
Na_2O	0 – 35
K_2O	0 – 5
MgO	0 – 25
Σ BaO, SrO, CaO, ZnO, PbO	0 – 5
TiO_2	0 – 3
La_2O_3	0 – 12
RE_2O_3	0 – 10
Y_2O_3	>0 – 25
As_2O_3	0 – 0.3
F	0 – 3
Sum R_2O_3, R=Al, B, La and RE	0 – 40

4. A glass according to claim 3, having the following properties:

Property	Range
n_d	1.50 - 1.70, especially 1.50 - 1.65
T(%) at 1550 nm for 1.0 mm	>90
CTE (-30 to +70°C) x $10^{-7}/^{0}C$	>100, especially >110
Tg (°C)	$\geq$ 400
E [GPa]	>85

5. A glass comprising:

Oxide	Mole %
SiO_2	40-60
GeO_2	0-10
B_2O_3	0-10
Al_2O_3	0-4
Li_2O	>0-26
Na_2O	>0-26
K_2O	0-15
MgO	0-15
Σ BaO, SrO, CaO, ZnO, PbO	0-10
TiO_2	0-9
ZrO_2	0-2
La_2O_3	0-4
Re_2O_3	0-4
Y_2O_3	>0-5
Sc_2O_3	0-4
Nb_2O_5	0-2
F	0-5

ΣR_2O_3, R=Al, B, La, and RE	0-25
As_2O_3	0-0.5

wherein RE represents rare earth ions, excluding La.

6. A glass according to claim 5, having the following properties:

Property	Range
n_d	> 1.5
T(%) at 1550 nm for 1.0 mm	> 88
CTE (-30 to +70°C) x $10^{-7}/^{o}C$	≥ 90
E (GPa)	> 80
Tg (°C)	≥ 350

7. A glass according to claim 5 comprising:

Oxide	Mole %
SiO_2	45-55
GeO_2	0-5
B_2O_3	0-8
Al_2O_3	0-2
Li_2O	>0-17
Na_2O	>0-19
K_2O	0-6
MgO	0-13
Σ BaO, SrO,CaO, ZnO, PbO	0-5
TiO_2	0-5
ZrO_2	0-1
La_2O_3	0-3
RE_2O_3	0-3

Y_2O_3	>0-4.5
Sc_2O_3	0-3
Nb_2O_5	0-1
F	0-3
$\sum R_2O_3$, R=Al, B, La, and RE	0-15
As_2O_3	0-0.3

8. A glass according to claim 7, having the following properties:

Property	Range
n_d	1.50-1.70
T(%) at 1550 nm for 1.0 mm	> 90
CTE (-30 to +70°C) x $10^{-7}/^0C$	≥ 100
Tg (°C)	≥ 400
E [GPa]	> 85

9. A glass comprising:

Oxide	Mole %
SiO_2	45.0-58.0
B_2O_3	0.0-5.0
Al_2O_3	0.0-3.0
Li20	6.5-16.5
Na_2O	7.0-24.0
K_2O	0.0-12.0
MgO	0.0-8.0
CaO	0.0-8.0

SrO	0.0-8.0
BaO	0.0-8.0
TiO_2	0.0-12.0
ZrO_2	0.5-5.5
Ta_2O_5	0.0-1.0
Gd_2O_3 + La_2O_3 + Y_2O_3	2.70-3.30
As_2O_3	0.0-0.15

wherein RE represents rare earth ions, excluding La.

10. A glass according to claim 9, having the following properties:

Property	**Range**
n_d	**>1.5**
T(%) at 1550 nm for 1.0 mm	**>88**
CTE (-30 to +70°C) x 10^{-7}/°C	**≥90**
E (GPa)	**>80**
Tg (°C)	**400-485**

11. A glass according to claim 9, comprising:

Oxide	**Mole %**
SiO_2	46.0-52.0
Al_2O_3	0.0-1.5
B_2O_3	0.0-1.0
Li_2O	7.0-16.0
Na_2O	7.0-20.0
K_2O	4.0-12.0
MgO	0.0-7.5
CaO	0.0-7.5
SrO	0.0-7.5
BaO	0.0-7.5
TiO_2	1.0-10.5
ZrO_2	1.5-5.0
Ta2O_5	0.3-0.7
La_2O_3 + Gd_2O_3 + Y_2O_3	2.6-2.9
As_2O_3	0.0-0.15

12. A glass according to claim 11, having the following properties:

Property	Range
n_d	1.50 - 1.70
T(%) at 1550 nm for 1.0 mm	>88
CTE (-30 to +70°C) x 10^{-7}/°C	>100
Tg (°C)	415-480
E [GPa]	>80

13. An interference filter comprising a glass substrate having at least two interference layers coated thereon, wherein the glass substrate is a glass according to claim 1.

14. An interference filter comprising a glass substrate having at least two interference layers coated thereon, wherein the glass substrate is a glass according to claim 5.

15. An interference filter comprising a glass substrate having at least two interference layers coated thereon, wherein the glass substrate is a glass according to claim 9.

16. A fiber optic system comprising a light source, a fiber optic transmission component, a receiver of transmitted radiation and an interference filter comprising a glass substrate having at least two interference layers coated thereon, said glass substrate comprising a glass according to claim 1.

17. A fiber optic system comprising a light source, a fiber optic transmission component, a receiver of transmitted radiation and an interference filter

comprising a glass substrate having at least two interference layers coated thereon, said glass substrate comprising a glass according to claim 5.

18. A fiber optic system comprising a light source, a fiber optic transmission component, a receiver of transmitted radiation and an interference filter comprising a glass substrate having at least two interference layers coated thereon, said glass substrate comprising a glass according to claim 9.

19. A process for making a glass according to claim 1, comprising melting raw materials corresponding to oxides in the glass, refining a resultant glass melt, casting the melt in a mold and optionally annealing.

20. A process for making a glass according to claim 1, comprising casting into a mold a glass melt produced from raw materials corresponding to oxides in the glass.

21. A process for making a glass according to claim 5, comprising casting into a mold a glass melt produced from raw materials corresponding to oxides in the glass.

22. A process for making a glass according to claim 9, comprising casting into a mold a glass melt produced from raw materials corresponding to oxides in the glass.

23. A demultiplexing optical component comprising the interference filter of claim 13.

24. A demultiplexing optical component comprising the interference filter of claim 14.

25. A demultiplexing optical component comprising the interference filter of claim 15.

26. A method of demultiplexing, comprising passing an optical signal of multiple wavelengths through a demultiplexing optical component according to claim 23.

27. A method of demultiplexing, comprising passing an optical signal of multiple wavelengths through a demultiplexing optical component according to claim 24.

28. A method of demultiplexing, comprising passing an optical signal of multiple wavelengths through a demultiplexing optical component according to claim 25.